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Materials engineer encourages youth down career path

by Timothy Anderl, Materials and Manufacturing Directorate

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Materials and Manufacturing Directorate engineer Katie Thorp, a natural in math and science academia, followed a series of educational and career paths to become an in-house composite expert. Through her journey from student to Air Force engineer, Thorp has continually encouraged junior high and high school students to pursue their interests along an educational path that will help them achieve their goals.

"As far back as I can remember I've been interested in math and science," Thorp said. "The excitement of understanding how things worked in the environment I lived in, in the human body and in solving other science-related mysteries really captured my interest."

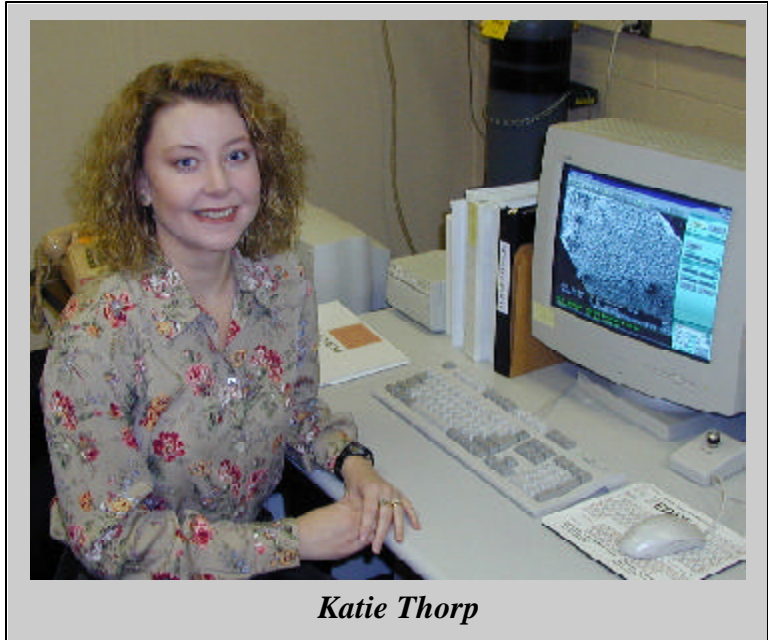
Her own enjoyment of those subjects led Thorp from Pasco, Wash., the small town where she grew up, to the University of Washington in Seattle, where she majored in ceramic engineering.

"I started out as a chemical engineering student, but decided to reconsider when I realized that I didn't enjoy organic chemistry. So, I went to see a biology counselor who encouraged me to stick with an engineering program. It turned out that ceramic engineering was a natural match with my course preferences," Thorp explained of her educational background.

Thorp was a graduate student at the university when she teamed up with a friend to develop a science education partnership in the Seattle area. The partnership was designed to introduce elementary school and junior high students to science and to hone the presentation skills of undergraduate students at the university.

"We wanted to create a program to take out to the local schools and my friend had been involved in a similar program with a northwest laboratory to pattern our program after," Thorp said. "We developed a kit that had a series of different science experiments for students to participate in. We also wrote up a text that undergraduates would present while they were in the classroom."

Meanwhile, Thorp was working on her senior research project, which was funded by the AFRL. She credits her laboratory mentor, Fred Hedberg for encouraging her to make the move to Ohio from Seattle, upon completion of her master's degree.



Katie Thorp

Thorp came to the directorate in 1991 as part of a University of Dayton Research Institute (UDRI) onsite contract for research in biotechnology. The UDRI program provided her with tuition reimbursement on her Materials Engineering Ph.D. at the University of Dayton. She completed in 2001 the program while working in the laboratory.

Thorp has volunteered with the Scanning Electron Microscope Educators Programs (SEMEDS), an educational outreach program designed to interest local junior high and high school students in science. The SEMEDS program, which has been around since 1990, introduces students to the base and AFRL and allows them to explore materials with scanning electron microscopes.

"When I first interviewed for my job with UDRI, the gentleman who brought me here immediately introduced me to Dr. Wade Adams. Chief Scientist Wade had just started the SEMEDS program in 1990 and encouraged me to become involved with it," Thorp said.

When students attend SEMEDS, volunteers explain about work being done in the laboratory and share their diverse educational backgrounds, while encouraging students to explore

Continued on page 2

Continued from page 1

differing materials and specimens using the microscopes.

Thorp said she often sees the payoff of volunteering for the directorate's outreach programs. She recently encountered a student, who was introduced to the directorate through the SEMEDs program, working in the laboratory. He had returned as part of a Southwest Ohio Council for Higher Education program, which provides students at Ohio universities the opportunity to work in the lab on research projects.

In 1998, Thorp was hired as a temporary government employee of the directorate and was hired as permanent within the year. As a permanent employee, she does polymer matrix composite work. She studies environmental effects, such as heat and moisture, on composites that are used in high temperature applications, such as jet engines.

"I do a lot of basic research for the Air Force and have spent the last 10 years developing an understanding of the molecular development and degradation of systems that are built with high temperature polymers," Thorp said. "Just recently we were able to develop new materials for an aircraft based on the results of the research we'd been doing. It is exciting to know that something I've had a hand in is going to be part of an aircraft.

"I am certain that some of the students that attend the SEMEDs program will someday play a part in the research and development of future materials that will impact future Air Force systems too." @

